



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/076,451

02/19/2002

Jong-Hyuck Park

030681-360

9870

21839

7590

12/21/2005

BUCHANAN INGERSOLL PC
(INCLUDING BURNS, DOANE, SWECKER & MATHIS)
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER

WONG, WARNER

ART UNIT

PAPER NUMBER

2668

DATE MAILED: 12/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1-11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1. The word short in the term "a short loop" of claim 1, line 8 is a relative word which renders the claim indefinite. A person of ordinary skill in the art cannot determine the scope of the claim because the applicant did not clearly define how long a loop is required to be considered as a "short loop" within the specification or in the claims.
2. The word short in the term "a short loop" of claim 7, line 7 is a relative word which renders the claim indefinite. A person of ordinary skill in the art cannot determine the scope of the claim because the applicant did not clearly define how long a loop is required to be considered as a "short loop" within the specification or in the claims.

Claim Objections

The following claims are objected to because of the following informalities:

1. **Claim 1, line 5:** The limitation "a first one space mode" appears to be misspelled and should be corrected to "a first tone space mode".
2. **Claim 2, lines 2-4:** The sentence for substep (b1) is poorly worded. Based on the examiner's best understanding, it appears that the limitation should be rewritten as

Art Unit: 2668

“(b1) each station receiving signals from the other station, wherein said signals are of the same signals in the information actually needed in data communications used in step (c), and at the same time used for detecting a short loop”.

3. **Claim 2, line 4:** The limitation “a short loop” appears to refer to the same limitation in claim 1, line 7. It should be revised to “the short loop”.

4. **Claim 7, line 5:** The limitation “a first one space mode” appears to be misspelled and should be corrected to “a first tone space mode”.

5. **Claim 8, lines 2-4:** The sentence is poorly worded. Based on the examiner’s best understanding, it appears that the limitation should be rewritten as “each station receiving signals from the other station, wherein said signals are of the same signals in the information actually needed in data communications used in the actual initialization step, and at the same time used for detecting a short loop”.

6. **Claim 8, line 4:** The limitation “a short loop” appears to refer to the same limitation in claim 7, line 7. It should be revised to “the short loop”.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 6, 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Chen (5,987,061) in view of Illidge (2002/0085514).

Regarding claims 1 and 7, Chen describes as a prior art an xDSL (VDSL) system/method comprising two stations (fig. 2f, #2010, 2014) which can detect a (short) loop (col. 18, lines 21-24, "Under favorable subscriber loop conditions, this MDL modem can provide a much higher transmission throughput which is limited by channel capacity or the hardware capabilities of the subscriber-end modem.") Chen lacks what Illidge describes as a method comprising:

(a) handshaking for exchanging basically needed information between the two stations (fig. 1a, BSC #104 and MS #114) a first tone space mode (IS-95 channels), and for determining whether or not each of the two stations supports a second tone space (IS-2000 channels) (fig. 6B, #656, 660, #661 and paragraph 37);

(b) switching the first tone space mode to the second tone space mode if capable (where capability is defined as the existence of short loop in Chen's reference) in each of the two stations for adjusting a tone space when it is determined in step (a) that each of the two stations supports the second tone space (fig. 6B, #663, where BSC "instructs the MS 114 to release the existing IS-95 physical channels"); and

(c) exchanging information actually need in data communications between the two stations in the second tone space mode for an actual initialization (fig. 6B, #663, where BSC "replace them with IS-2000 physical channels").

It would have been obvious to one with ordinary skill in the art at the time of invention by applicant to use the method of Illidge to the xDSL (VDSL) system/method of Chen. The motivation being that the enhanced method/system may then have the

Art Unit: 2668

expanded capability to support the new second tone space (IS-2000 channels), where the second tone space may allow greater throughput in data transmission.

Regarding claims 6 and 11, Chen and Illidge combined describe all limitations set forth in claims 1 and 7. Chen and further specifies the VDSL system comprises of one modem at an optical network unit (ONU) (fig. 2j & 2k, remote ONU's AFE) and another modem being at a remote terminal (fig. 2f, customer premise equipment #2014) (abstract, "The line code and rate negotiation process may be implemented at the beginning of each communication session through the exchange of tones between the modems").

8. **Claims 5 and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen in view of Illidge, and further in view of Bruss (2001/0026538).

Chen and Illidge combined describe all limitations set forth in claims 1 and 7 respectively.

Chen and Illidge lack what Bruss describes: in step (a) whether or not the two stations are capable of supporting the second tone space is found by exchanging messages, and capability information is transmitted through a (non-standard) information field (fig. 2, new/non-standard message #202 and #203 exchanges between the UE #206 and MSC/VLR #208).

It would have been obvious to one with ordinary skill in the art at the time of invention by applicant to incorporate message exchanges through (non-standard) information field in support of second tone space (capability). The motivation being that

Art Unit: 2668

"it would be desirable to provide systems and methods for handling the exchange of multicall capabilities.. that supports [second tone space] compatibility with second generation devices" (Bruss, paragraph 13), where the compatibility is referring to the second tone space and second generation devices are referring to the VSDL devices.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Warner Wong whose telephone number is 571-272-8197. The examiner can normally be reached on 5:30AM - 2:00PM, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Warner Wong
Examiner
Art Unit 2668

WW


CHIEH M. FAN
SUPERVISORY PATENT EXAMINER